IN THE CLAIMS

1. (Previously Presented) A method of conducting R chemical reactions, where R is a positive integer, in a system which includes an apparatus which provides energy for the chemical reactions, said system also including a parameter selecting unit having a user interface and storage means for carrying a database, said chemical reaction involving one or more chemical species ^XB and resulting in a reaction product ^XD which includes a functionality δ, where the chemical reaction involves one or more functionalities β in the ^XB's which are transformed into δ in ^XD, each reaction being performed under the influence of one or more corresponding chemical substances A_R, such chemical substances A_R including a chemical functionality α_R being involved in the transformation of the functionality/functionalities β to the functionality δ, said database comprising N sets of associated data, each of the N sets comprising

    i) a set of reaction parameters for a chemical reaction involving the transformation of one or more functionalities $^N\beta$ of chemical species ^NB into $^N\delta$ in a product ND under the influence of one or more chemical substances ^NA, such chemical substance(s) each including a chemical functionality $^N\alpha$ being involved in the transformation of the functionality $^N\beta$ to the functionality $^N\delta$; and

    ii) functional or structural information about the chemical species ^NB;

the method comprising that

* the user provides information to the user interface of the parameter selection unit about the functionality/functionalities β in the chemical species ^XB;

* the user provides information to the user interface of the parameter selection unit about the desired transformation of β to δ;

* the parameter selection unit retrieves R sets of associated data (Σ_R) from the database, such sets of associated data being selected so that the functionality/functionalities $^N\beta$ in each set of associated data is/are essentially identical to the functionality/functionalities β in $^X B$ and the functionality $^N\delta$ is essentially identical to δ in the product $^X D$, in order to obtain the R sets of reaction parameters ($^X\Sigma_R$), said R sets of reaction parameters ($^X\Sigma_R$) being accompanied by corresponding information about the chemical substance(s) A_R under which influence the R reactions should be conducted and information about any additional constituents involved in the chemical reaction;

  * an array of R reaction mixtures each comprising a predetermined amount of the chemical substance(s) A_R and the chemical species $^X B$ and any additional constituents required is prepared according to the sets of reaction parameters;

  * each of the R reaction mixtures are treated in the apparatus in accordance with the corresponding set of reaction parameters.

2. (Original) A method according to claim 1, wherein the array of R reaction mixtures is provided from $^X B$ stock solution(s) and a kit comprising stock solutions of the chemical substance(s) A_R and any additional constituents required.

3. (Original) A method according to claim 1, wherein the R sets of reaction parameters involves the use of more than one chemical substance A_R.

4. (Original) A method according to claim 1, wherein the R sets of reaction parameters involves the use of R chemical substances A_R.

5. (Original) A method according to claim 1, in which the array of R reaction mixtures is prepared by combining the chemical species ^XB with the content of one or more of P containers each comprising a chemical substance A_R including a chemical functionality α_R which is intended to facilitate the transformation of a functionality β to a functionality δ in a chemical reaction involving a chemical species ^XB.

6. (Original) A method according to claim 1, wherein the R sets of reaction parameters are provided in the form of control parameters for the apparatus.

7. (Original) A method according to claim 1, wherein treatment of the R reactions is performed substantially simultaneously.

8. (Original) A method according to claim 1, wherein treatment of the R reactions is performed sequentially.

9. (Original) A method according to claim 1, wherein the treatment includes heating.

10. (Original) A method according to claim 1, wherein the reaction is a microwave facilitated chemical reaction.

11. (Original) A method according to claim 1, wherein the apparatus comprises a microwave reaction cavity.

12. (Withdrawn) A kit for use in the method defined in claim 1, said kit comprising P containers each comprising a chemical substance A_R including a chemical functionality α_R which is intended to facilitate the transformation of one or more functionalities β to a functionality δ in a chemical reaction involving one or more chemical species $^X B$, said chemical reaction being intended to result in a reaction product $^X D$ which includes a functionality δ, where the chemical reaction involves one or more functionalities β in the $^X B$'s which are transformed into δ in $^X D$.

13. (Withdrawn) A kit according to claim 12, which further comprises additional constituents required for the transformation.

14.-16. (Canceled)

17. (Withdrawn) A kit comprising P containers each comprising a chemical substance A_R including a chemical functionality α_R which is intended to facilitate the transformation of one or more functionalities β to a functionality δ in a chemical reaction involving one or more chemical species $^X B$, said chemical reaction being intended to result in a reaction product $^X D$ which includes a functionality δ, where the chemical reaction involves one or more functionalities β in the $^X B$'s which are transformed into δ in $^X D$, said kit usable to conduct R chemical reactions, where R is a positive integer, in a system which includes an apparatus which provides energy for the chemical reactions, said system also including a parameter selecting unit having a user interface and storage means for carrying a database, said chemical reaction involving one or more chemical species $^X B$ and resulting in a reaction product $^X D$ which includes a functionality

δ, where the chemical reaction involves one or more functionalities β in the ^{X}B's which are transformed into δ in ^{X}D, each reaction being performed under the influence of one or more corresponding chemical substances A_R, such chemical substances A_R including a chemical functionality α_R being involved in the transformation of the functionality/functionalities β to the functionality δ, said database comprising N sets of associated data, each of the N sets comprising

i) a set of reaction parameters for a chemical reaction involving the transformation of one or more functionalities $^N\beta$ of chemical species ^{N}B into $^N\delta$ in a product ^{N}D under the influence of one or more chemical substances ^{N}A, such chemical substance(s) each including a chemical functionality $^N\alpha$ being involved in the transformation of the functionality $^N\beta$ to the functionality $^N\delta$; and

ii) functional or structural information about the chemical species ^{N}B;

the method comprising that

* the user provides information to the user interface of the parameter selection unit about the functionality/functionalities β in the chemical species ^{X}B;

* the user provides information to the user interface of the parameter selection unit about the desired transformation of β to δ;

* the parameter selection unit retrieves R sets of associated data (Σ_R) from the database, such sets of associated data being selected so that the functionality/functionalities $^N\beta$ in each set of associated data is/are essentially identical to the functionality/functionalities β in ^{X}B and the functionality $^N\delta$ is essentially identical to δ in the product ^{X}D, in order to obtain the R sets of reaction parameters ($^X\Sigma_R$), said R sets of reaction parameters ($^X\Sigma_R$) being accompanied by corresponding information about the chemical substance(s) A_R under which influence the R

reactions should be conducted and information about any additional constituents involved in the chemical reaction;

* an array of R reaction mixtures each comprising a predetermined amount of the chemical substance(s) A_R and the chemical species $^X B$ and any additional constituents required is prepared according to the sets of reaction parameters;

* each of the R reaction mixtures are treated in the apparatus in accordance with the corresponding set of reaction parameters.

18. (Withdrawn) A kit according to claim 17, which further comprises additional constituents required for the transformation.

19. (Withdrawn) A computer readable data carrier loaded with a computer program system, said computer program system

* retrieving information via the user interface of the parameter selection unit about the functionality/functionalities β in the chemical species $^X B$;

* retrieving information via the user interface of the parameter selection unit about the desired transformation of β to δ;

* retrieving, via the parameter selection unit, R sets of associated data (Σ_R) from the database, such sets of associated data being selected so that the functionality/functionalities $^N \beta$ in each set of associated data is/are essentially identical to the functionality/functionalities β in $^X B$ and the functionality $^N \delta$ is essentially identical to δ in the product $^X D$, in order to obtain the R sets of reaction parameters ($^X \Sigma_R$), said R sets of reaction parameters ($^X \Sigma_R$) being accompanied by

corresponding information about the chemical substance(s) A_R under which influence the R

reactions should be conducted and information about any additional constituents involved in the

chemical reaction;

* providing instructions to the liquid handler about the preparation of an array of R reaction

mixtures each comprising a predetermined amount of the chemical substance(s) A_R and the

chemical species ^XB and any additional constituents required according to the sets of reaction

parameters;

* providing instructions to the reaction cavity about treatment of each of the R reaction mixtures

in the apparatus in accordance with the corresponding set of reaction parameters in order to

conduct R chemical reactions, where R is a positive integer, in a system which includes an

apparatus which provides energy for the chemical reactions, said system also including a

parameter selecting unit having a user interface and storage means for carrying a database, said

chemical reaction involving one or more chemical species ^XB and resulting in a reaction product

^XD which includes a functionality δ, where the chemical reaction involves one or more

functionalities β in the ^XB's which are transformed into δ in ^XD, each reaction being performed

under the influence of one or more corresponding chemical substances A_R, such chemical

substances A_R including a chemical functionality α_R being involved in the transformation of the

functionality/functionalities β to the functionality δ, said database comprising N sets of

associated data, each of the N sets comprising

> i) a set of reaction parameters for a chemical reaction involving the transformation
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> of one or more functionalities $^N\beta$ of chemical species ^NB into $^N\delta$ in a product ND
>
> under the influence of one or more chemical substances ^NA, such chemical

substance(s) each including a chemical functionality $^N\alpha$ being involved in the transformation of the functionality $^N\beta$ to the functionality $^N\delta$; and

ii) functional or structural information about the chemical species ^NB;

the method comprising that

* the user provides information to the user interface of the parameter selection unit about the functionality/functionalities β in the chemical species ^XB;

* the user provides information to the user interface of the parameter selection unit about the desired transformation of β to δ;

* the parameter selection unit retrieves R sets of associated data (Σ_R) from the database, such sets of associated data being selected so that the functionality/functionalities $^N\beta$ in each set of associated data is/are essentially identical to the functionality/functionalities β in ^XB and the functionality $^N\delta$ is essentially identical to δ in the product ^XD, in order to obtain the R sets of reaction parameters ($^X\Sigma_R$), said R sets of reaction parameters ($^X\Sigma_R$) being accompanied by corresponding information about the chemical substance(s) A_R under which influence the R reactions should be conducted and information about any additional constituents involved in the chemical reaction;

* an array of R reaction mixtures each comprising a predetermined amount of the chemical substance(s) A_R and the chemical species ^XB and any additional constituents required is prepared according to the sets of reaction parameters;

    * each of the R reaction mixtures are treated in the apparatus in accordance with the corresponding set of reaction parameters.